

PATENT

INSTITUT FRANÇAIS DU PETROLE

METHOD FOR DETERMINING THE COMPOSITION OF A FLUID

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ABSTRACT

Method for determining the composition of a homogeneous fluid, for example a petroleum effluent on flow, an emulsion consisting of water and oil, or a foam consisting of oil and gas.

The attenuation and the phase shift of microwave beams that have traversed a fluid of unknown composition with paths of different lengths are measured (stage A). Two equations approaching the measured values are determined, the first equation giving a relation between the attenuation and the length of the path, the second equation giving a relation between the phase shift and the length of the path (stage C). Then the composition of the fluid is determined by comparing the two equations with pairs of equations stored in form of databases, each pair of equations corresponding to a fluid of known composition (stage D).